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TITLE : PRODUCTION OF BIOTIN

ABSTRACT : PROBLEM TO BE SOLVED: To effectively produce biotin, which is important as one of vitamins, by culturing a microorganism having a plasmid containing an S-adenosyl-L-methionine synthetase gene and a biotin operon, and recovering products from the culture mixture.

SOLUTION: An S-adenosyl-L-methionine synthetase gene is obtained by culturing strains of Escherichia coli W3110 (ATCC 1498), subsequently extracting the chromosomal DNA according to an ordinary DNA-extraction method and cloning through PCR amplification with synthetic primers using the chromosomal DNA as template. Subsequently, the obtained gene is integrated into a plasmid containing a biotin operon to prepare a recombinant plasmid, and the recombinant plasmid is transduced into a microorganism such as Escherichia coli to carry out transformation. Then, the transformant is cultured in a nutrient medium, and biotin is recovered from the culture mixture. Thus, the objective biotin, which is an important vitamin for animals, plants and microorganisms, is effectively produced.

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